The Sensory Gardens as the New Direction for Ecological Entrepreneurship Development

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Introduction

Mother Nature teaches us that we don't expect from her more than we gave her. In that case humans have an obligation to correct harmonic relationship with nature that they violated because of the megalopolis processes such as industrialization, urbanization and pollution. One of paramount problems of modern landscape architecture and green economy is to maximize preservation or to create a new natural zones and complexes in city space. Because of the technological development, the health status of the population in cities is getting worse every year, especially in psychological and emotional terms.

Human population needs new ideas how to live with nature and ecological entrepreneurship is a concept that is not interested only in making profit but also takes care about environment. Ecological entrepreneurship is relatively new term and some authors uses different terms such as "green entrepreneurship" or "environmental entrepreneurship" or "ecological entrepreneurship".

Anderson (1998) said that both entrepreneurship and environmentalism are based on a perception of value. The attitudes which inform environmental concern create areas of value that can be exploited entrepreneurially.

"Environmental Entrepreneurs" not only recognize opportunity, but construct real organizations to capture and fix change in society. According to The Organisation for Economic Co-operation and Development (OECD), SMEs participate actively in the emerging green industries, such as renewable energy production, smart metering, building refurbishment, cleaner cars, wind and solar installations, and battery development. For example, in the European Union (EU) entrepreneurship is highly important because 99.8% of Europe's private companies are SMEs. In 2014 EU adopted "The Green Action Plan (GAP)" with the aim to help small and medium-sized enterprises to take advantage of resource efficiency improvements.

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"Ecological entrepreneurship is a reward – based approach to addressing environmental problems, rather than a punitive approach, and may prove more successful at changing attitudes and practices in the long run."(http://enviroeducation.com/resources/ecological-entrepreneurship-academic-requirements-professional-outlook). One of the ways of achieving this balance is the development and the use of sensory garden. Sensory garden is a specially organized natural territory where a favourable condition for a close communication with the natural environment is created. John Dewey in his work Experience and Nature (1925) said that "we cannot separate organic life and mind from physical nature without also separating nature from life and mind. The separation has reached the point where intelligent persons are asking whether the end is to be a catastrophe, the subjection of man to the industrial and military machines he has created." Since ancient times, philosophers and Aesculapius of the whole world showed interest in the nonconventional ways of improvement, promoting a quicker restoration of a mental and physical condition of the patient. It was considered that the nature, with her elements, such as: plants, sunlight, water, sand, birds chirping, animals and her many other components, are very effective as therapeutic addition to a traditional method of treatment. The history of emergence of sensory gardens leaves by times of the Roman Empire. People used garden therapy since ancient times.

The term "sensory gardens" began to use in science in the mid-seventies.

Today sensory gardens are one of the perspective directions of development of landscaping. Unique sensory gardens are created on each continent of Earth and the quantity of them constantly grows. The word "Sensorics" in translation from Latin means the "perception" which is performed by means of sense of organs. The person obtains information from the outside world by means of five main sense organs: eyes (sight), ears (hearing), language (taste), nose (sense of smell), skin (touch, tactile feelings) and it becomes more active when it beholds the nature or has a rest in a garden because the nature and a surrounding landscape, inevitably cause emotions.

The aim of this paper is to explore the meaning of the sensory gardens and how they can be used as a new concept of ecological entrepreneurship.

Literature review

Business society is constantly changing and in that process business activities of companies are changing as well. OECD uses term of "green entrepreneurship" which could be defined in terms of the technology used for production in any sector of the economy, or in terms of the sectors firms are

active in, in which case our attention is restricted to parts of the economy producing specific types of output. Valeryanovna (2012) says that ecological entrepreneurship is associated with an activity, which is conducted for minimizing risks of the influence on all components of the environment with due regard to ecological preferences in the system of economic relations, and which is aimed at systematic gaining of profits on efficient use of property, natural and secondary resources, sale of goods, and performance of work and services. Auerswald (2015) states that a favorable business climate depends on entrepreneurship and that entrepreneurship policy potentially can increase economic vibrancy by enabling entrepreneurial ecosystems.

Larson (2000) extends this view to environmental entrepreneurs describing how they may be able to restructure the relationship between business and environment in ways that simultaneously create private economic value and public environmental value. Taragola and group of authors (2010) say that sustainable entrepreneurship is a key driver for economic, ecological and social sustainability. According to Walley and Taylor (2002), there are three types of typologies to boost green entrepreneurship:

a. compliance-based, new market opportunities emerging as an outcome of changes to government regulation and legislation requiring environmental improvement,
b. market-driven, new market opportunities emerging from the positive impact that more environmentally beneficial behavior can bring to customers,
c. value-driven, market opportunities opening up in the face of demand due to changes in consumer preferences and tastes for more environmentally-friendly products or services.

Walley and Taylor (2002) explain that the emergence of green entrepreneurship is a result of internal and external influences on the individual where the external influences include regulations, economic incentives and the moral demands of consumers and the internal influences include family and friends, past experiences, personal networks and education. In the case of sensory gardens, the idea is to combine both of these elements.

Scientific understanding of sensory gardens dates back to 1970. Stoneham (1996) stated that the initial idea of sensory gardens was derived from the horticultural therapy movement, which was developed in the United Kingdom in the 1970s. Horticultural therapy was focused on special environments, i.e. hospitals and rehabilitation units and, as a result, it developed more rapidly than sensory gardens. One positive aspect of sensory gardens was the genuine response to meet the needs of visually-impaired people. Stoneham added, however, there was not really much thought given to the design of these

gardens. Another scientists as Barker (1968), Gibson (1986) and Hart (1979) started to show how useful sensory garden can be for a society.

The first projects of sensory gardens were often located in public parks because the local authority decided that it was a way of showing that they were implementing inclusion strategies. In the 1980s Stoneham added that, visually-impaired people challenged the initial ideas about 'gardens for the blind' because the issue of being segregated from able-bodied people was itself beginning to be challenged. It is now widely understood that disabled people don't want to be segregated from able-bodied people in their enjoyment of green areas. O'Connell and Spurgeon (1996) said that the idea is to integrate green areas that allow an enhanced sensory experience, which will make for a sustainable and inclusive approach rather than making 'special' provision for disabled people. Nowadays the most published international scientist in the questions connected with sensory garden is Hussein Hazreena, but she continue the line of the first specialist in sensory garden and concentrate on using of sensory garden for the people with special needs. However, the approach that implies that sensory garden are used only for therapy of some diseases, is not entirely accurate, because people in urban areas are exposed to high levels of stress which led that sensory garden became more widely. For example, Sikorskaya (2013) says that in Russia sensory garden started to use for children development at the end of XX century.

In countries like Germany, French, Czech Republic, Italy, sensory garden are being designed for all society and for the different group of people, especially by the age, because this project may enable population in the cities to be in harmony with nature. People today are ready to pay their own money for the possibility to spend their time at the nature especially with kids. For example, in Russia there is active developing chain of mobile sensory garden, which works as the successful business project, which is located mainly in different regions of Moscow and also is developing in other Russian cities like Voronezh and others. Main business in these projects is based on the satisfaction of modern family's needs, combining interactive education and rest in the nature, created for the whole for family.

Methodology

To analyse the potentials of sensory gardens, as a type of an ecological entrepreneurship, a research was conducted in Yekaterinburg, Russia in the period of 01.7 – 01.8.2016, in the sensory garden of Rastorguyev – Kharitonov Estate in Yekaterinburg.

Table 1. *Summary of the data collection at the case study site (Yekaterinburg, Sensory garden, 2016)*

METHOD	RESPONDENT	OBJECTIVES
Interview with the landscape visitors to the garden:	Landscape architecture (n=3)	To investigate the design process and landscape architect's intention; To allow subsequent assessment of whether users, especially kids.
Interview with the teachers	Teachers (n=3)	To enquire into their experience of and benefits in having the sensory garden; To plan educational activities for kids the sensory garden.
Interview with the visitors	Grown up (n=32) Kids(n=20)	To understand how visitors behave in the sensory garden thus providing information that observation alone cannot provide; To get information first hand from the visitors and to obtain their own responses for forecasting plan of activities in sensory garden.
Observation and behavioral mapping	All users of the case-study sensory Garden (58)	To plan and forecast the future number of visits of people to sensory garden and to use it for business-planning. To estimate the possible catalog of service in sensory garden and future level of prices for this service

Source: Author, 2016

Due to the lack of information on the subject of 'sensory gardens', the limitations of time for research and the difficulties surrounding communication between the researcher and the visitors with speech, language and communication difficulties, two methods were thought to be the most appropriate: "Interview/ Walk-through interview".

The method "Interview with the visitors" was used when gathering information from the landscape architects, teachers and kids.

Method "Observation and behaviour mapping" – was used when collecting data of the users using the sensory gardens, particularly kids, when the researcher found that it was difficult to get first-hand information from those who were interviewed, see Table 1. Affordance theory was used in conjunction with these methods, in order to find out which prospects for business development can be used by entrepreneurs in sensory gardens.

Results and discussion

The result of the conducted research, by using two methods such as "Interview/Walk-through interview", show that people are interested in visiting sensory garden 10-30 times per year with middle duration of about 20-40 minutes; see Figure 3; and they are ready to pay EUR 3-7 per one lesson at sensory garden; see Figure 4.

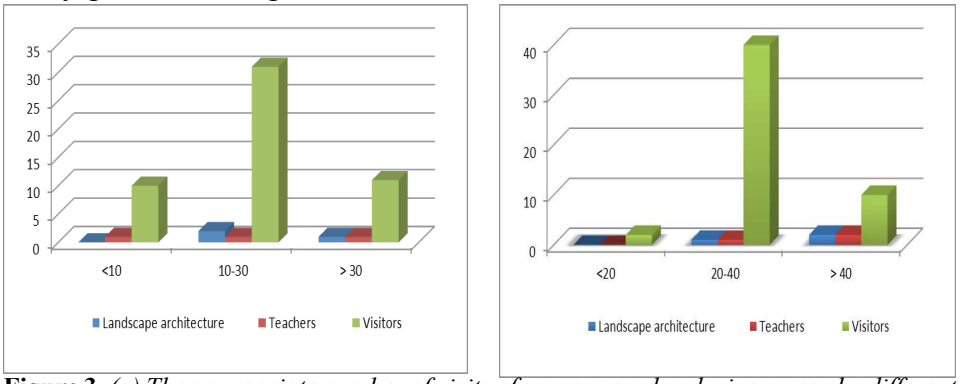

Figure 3. *(a) The appropriate number of visits of sensory garden during a year by different interviewed groups (number of visits per year)*
(b) The appropriate duration of one lesson at sensory garden (minutes)
Sources: Author (2016)

One person who is interested in visiting sensory garden, on that occasion can spend from EUR 30 till 210 per year. Due to recommendation by our research, duration of 1 lesson at sensory garden is about 40 minutes (see Figure 3 (b), visiting the capacity of sensory garden (small, ordinary, sensory garden can accommodate about 15-20 people without any discomfort.) for one day sensory garden can service approximately 120-160 people. If people are interested to visit sensory garden minimum 10 times per year, with appropriate period of 5 month, we can forecast that one sensory garden can be useful for the territory with the population of 1800-2400 people. It means that two to three thousand people can use the effects, especially in the terms of therapy, of the sensory garden.

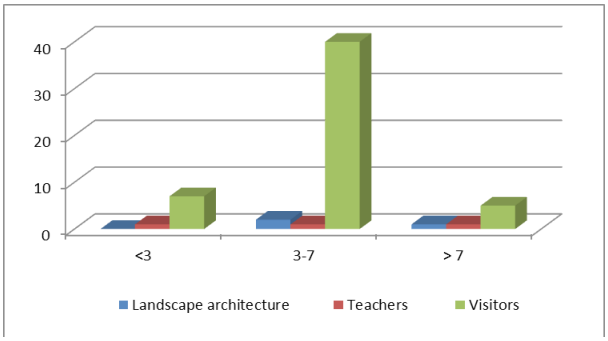

Figure 4. *The attractive cost of one lesson in sensory garden for different interviewed groups Sources: Author (2016)*

The revenue of one middle sensory garden, per year, due to our research results, can be between EUR 5. 400-16. 800 per year. It depends of the quality of garden design and its marketing and promotion. Middle investments to sensory garden are about EUR 1.214. So we can summarise that investment project of sensory garden can return investment in the first year with good profit and this direction is very prospective for entrepreneurship.

Conclusion

Quality environment provides, not only the health of the population, but may form the basis for economic growth and development of the country, especially in the field of entrepreneurship. One such example is the encouragement and development of ecological entrepreneurship. The use of the term ecological entrepreneurship is recent but it is based on the principle that profit is not the only and ultimate goal, nor to create the harmony with the nature.

One such an example is the use of sensory gardens, which is a specially organized natural territory where a favourable condition for a close communication with the natural environment is created. Today sensory gardens are one of the perspective directions of development of landscaping. Unique sensory gardens are created on each continent of Earth and the quantity of them constantly grows. At the begging of use, sensory gardens were created only for therapy of some diseases, but that approach is not entirely accurate, because people in urban areas are exposed to high levels of stress which led that sensory garden became more widely. People today are ready to pay their own money for the possibility to spend their time at the nature especially with kids.

In order to explore that possibility, a research was conducted in the sensory garden of Rastorguyev – Kharitonov Estate in Yekaterinburg, Russia, in the

period from July until August of 2016. Because of the lack of information on the subject of 'sensory gardens', the limitations of time for research and the difficulties surrounding communication between the researcher and the visitors with speech, language and communication difficulties, in the research there were used two methods: "Interview/Walk-through interview".

The result of the conducted research shows that people are interested in visiting sensory garden 10-30 times per year with middle duration of about 20-40 minutes and are willing to pay EUR 3-7 per one lesson at sensory garden.

According to that, one person who is interested in visiting sensory garden, on that occasion can spend from EUR 30 till 210 per year where the revenue of one middle sensory garden, per year, due to our research results, can be between EUR 5.400-16.800 per year.

Based on the previous data, sensory gardens are a good possibility from both sides: they improve ecological standards in the society and they are profitable in the long run.

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